



(43) International Publication Date
22 September 2005 (22.09.2005)

PCT

(10) International Publication Number
WO 2005/088640 A3

(51) International Patent Classification⁷: G06F 7/00, 15/80

(21) International Application Number:
PCT/GB2005/000895

(22) International Filing Date: 9 March 2005 (09.03.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0405283.3 9 March 2004 (09.03.2004) GB

(71) Applicant (for all designated States except US): AS-PEX SEMICONDUCTOR LIMITED [GB/GB]; Rapid House, 40 Oxford Road, High Wycombe, Buckinghamshire, HP 11 2EE (GB).

(72) Inventors; and

(75) **Inventors/Applicants (for US only): JALOWIECKI, Ian** [GB/GB]; c/o Aspex Semiconductor Limited, York House, Cottingley Business Park, Bradford, BD16 1PF (GB). **WHITAKER, Martin** [GB/GB]; c/o Aspex Semiconductor Limited, York House, Cottingley Business

Park, Bradford, BD16 1PF (GB). **BOUGHTON, Donald** [GB/GB]; c/o Aspek Semiconductor Limited, York House, Cottingley Business Park, Bradford, BD16 1PF (GB).

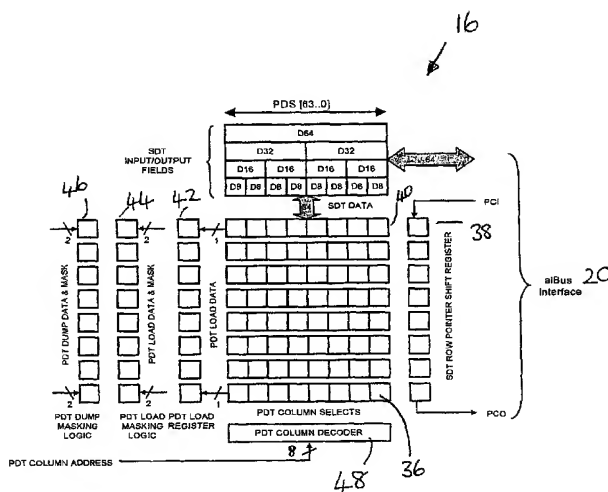
(74) Agents: AHMAD, Sheikh, Shakeel et al.; David Keltie Associates, Fleet Place House, 2 Fleet Place, London EC4M 7ET (GB).

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,

[Continued on next page]

(54) Title: IMPROVEMENTS RELATING TO ORTHOGONAL DATA MEMORY



(57) Abstract: A multi-ported orthogonal data memory (16) for effecting a corner-turning function, where for example data input as a sequence of bit-parallel word-serial data transfers are converted to data output in a bit-serial, word-parallel fashion, is described. The memory (16) is arranged to transfer data words comprising a plurality of data items and comprising: a plurality of data memory cells (36) arranged in the form of a matrix having rows and columns, and a plurality of groups (A, B, C, D) of memory cells (36) within the matrix, each group (A, B, C, D) being defined across multiple rows and columns and being individually addressable to effect transfer of a data word thereto; and enabling means having dedicated strobe connections (PD TEN) to each of the plurality of groups (A, B, C, D) of memory cells (36) and being arranged to enable selected ones of the plurality of groups (A, B, C, D) of memory cells (36) to read data present at their inputs, or to write stored data to their outputs, in a single transfer operation.



SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:

27 October 2005